Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Reliability and Continuity of Communications Networks, Including Broadband Technologies	)	PS Docket No. 11-60
	)	
Effects on Broadband Communications Networks of Damage or Failure of Network Equipment or Severe Overload	)	PS Docket No. 10-92
	)	
Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks	)	EB Docket No. 06-119

REPLY COMMENTS OF THE UTILITIES TELECOM COUNCIL

The Utilities Telecom Council (UTC) hereby files its reply comments in response to the Commission's *Notice of Inquiry* in the above-referenced matter.[1] UTC echoes the comments from utility stakeholders that identify the issues for reliability and resiliency of commercial communications networks. UTC also questions the claims and positions in comments by commercial communications network service providers and equipment suppliers. UTC urges the Commission to consider the communications needs of utilities and other critical infrastructure industries ("CII") and to provide opportunities for utility and CII input into industry organizations and standards groups as an informal means to promote the reliability and resiliency of commercial networks to meet the communications needs of utilities and other CII. UTC emphasizes that utilities and other CII will continue to rely on their own private internal networks for mission critical operations, even though they do use commercial communications networks and services to support some of their operations. Moreover, the Commission should provide utilities with access to suitable auction-exempt spectrum to ensure the safe, efficient and reliable delivery of essential electric, gas and water services to the public at large.

[1] *Reliability and Continuity of Commercial Networks, Including Broadband Technologies*, Notice of Inquiry, PS Docket No. 11-60, 26 F.C.C.R. 5614 (2011)("*NOI*").

I. Utility and Other CII Have Raised Concerns on the Record Regarding Reliability and Resiliency of Commercial Communications Networks.

The record reflects the fact that utilities need reliable and resilient communications for both routine and emergency response operations. Electric utilities and other CII use communications to dispatch field personnel and to monitor and control critical infrastructure during routine operations.[2] In addition, utilities use communications to protect field personnel and the grid during emergency response to coordinate with public safety entities, as well as to provide mission critical voice and data communications during service restoration.[3] Due to the critical nature of the operations they support, utility communications networks are designed, built and operated to demanding standards that exceed those of commercial communications systems for coverage, availability and survivability.[4]

Unfortunately the record also reflects that commercial communications networks often fail to meet the exacting communications needs of utilities. For example, Oncor "experienced operational problems several times when commercial wireline communications equipment has failed or lacked sufficient redundancy."[5] Specifically, Oncor explained that fires, floods and copper theft resulted in disconnecting substations from the utility's remote monitoring and control systems. "In each instance, the commercial communications providers did not have sufficient redundant facilities and, as a result, Oncor's communications and operations were significantly and negatively disrupted, sometimes for several days."[6] Oncor also reported problems with a "major" commercial mobile

[2] *See e.g.* Comments of Oncor Electric Delivery Company (Oncor) in WT Docket No. 11-60 at 3-6 (filed July 7, 2011)(describing utility communications for "Normal Operating Conditions" (including daily and smart grid operations)).

[3] *Id.* at 6-15 (describing utility communications for "Storm Restoration Operations" and "Mission Critical Operations (including black start operations, wide area situational awareness, broadband to substation, and transmission line teleprotection).

[4] *See* Comments of UTC at 4.

[5] *See* Comments of Oncor at 3.

[6] *Id.*

service provider in 2010, which caused Oncor to lose its mobile data capabilities for an entire week.[7] More recently, it has experienced ongoing problems that have affected mobile voice as well as data communications.[8] According to Oncor, the carrier was "less than forthcoming" when asked about the problems.[9]

These problems are not anecdotal. As Oncor explained, "[w]hile some commercial carriers tout (mostly in television commercials) "99% reliability," 99% still leaves at least three days of the year when their system is down--a time period unacceptable for an electric utility's critical infrastructure needs. Instead, electric utilities need communications with reliability metrics of 99.999% to 99.9999% ("five 9's" and "six 9's" respectively) to support critical grid command and control activities."[10] Similarly, Northeast Utilities reported to the Department of Energy that,

> "[t]he Internet evolution has caused the telephone carriers to go where the business is and pay less attention to low volume special circuit requirements and designs. Carriers such as Verizon have made a business decision to sell off the wire line business due to declining plain old telephone service, "POTS", revenue. More investment has gone into the cell phone mobile/wireless business. Utility real time protection and control systems require low latency and deterministic communications routes which are not well served by the public internet infrastructure."

Moreover, Northeast Utilities included "actual statistics from [its] corporate router network" that compared the performance of privately owned backhaul (both fiber and microwave) against leased DSL, and Internet T1 services between May 2009 and April 2010, and the statistics showed that the utility's private services were down "3 times fewer hours than leased services were down over the past year."[11]

Other critical infrastructure industries report similar problems. For example the American

[7] *Id*. at 7

[8] *Id.*

[9] *Id.*

[10] *Id.* at 5.

[11] Comments of Northeast Utilities Systems to the Department of Energy (DOE) in response to the DOE RFI on the Communications Needs of Utilities at 3 (filed July 12, 2010).

Petroleum Institute (API) met with the Commission and explained that "API's members see several challenges inherent in the use of carrier networks for mission critical applications, including availability, resiliency, capacity (particularly during emergencies), and restoration priority."[12] Further, API "provided several examples in which commercial carrier services are ill-suited for certain oil and natural gas industry applications," including the fact that consumer cell phones are not permitted within refineries or at other oil and natural gas facilities because they are not "intrinsically safe" (i.e. designed so as not to ignite flammable gases present in the atmosphere).[13]

These comments support the view of UTC on the record that the Commission is correct in its concerns about the reliability and resiliency of commercial networks. Ultimately, "if commercial service providers want to provide service to utilities and other CII, they must meet their functional requirements, including backup power and network redundancy/diverse routing."[14] Given the comments on the record by utilities and other CII in this proceeding, as well as other proceedings – all of which reflect generally negative experiences with using commercial networks – UTC submits that "there are fundamental differences between utility and carrier networks when it comes to reliability in general and with respect to specific issues such as backup power and backhaul redundancy that affect continuity of service."[15] Moreover, these fundamental differences reflect the "reality … that commercial service providers will design their networks for reliability to the extent that it is feasible and the costs can be economically justified," which is why commercial service providers do not provide coverage in remote areas or provide sufficient capacity to avoid congestion during emergencies, such as the recent earthquake. [16] This reality

[12] Letter from Greg Kunkle, Counsel for API, to Marlene Dortch, Secretary FCC, in WT Docket No. 06-11 (filed Jul. 15, 2011)).

[13] *Id.*

[14] Comments of UTC in WT Docket No. 11-60 at 6 (filed July 7, 2011).

[15] *Id.* at 6-7.

[16] *Id.* at 3.

cannot and should not be glossed over.[17]

II. Commercial Service Providers and Equipment Manufacturers Claim Their Networks are Reliable and Resilient and Oppose Mandates or Guidelines.

Comments by commercial communications network service providers and equipment suppliers almost uniformly deny that there are any problems with the reliability and resiliency of commercial networks. Moreover, they oppose any government mandates, guidelines or service level requirements.[18] Specifically, they oppose battery backup and network diversity requirements.[19] In support of their arguments, they claim that commercial communications networks are highly reliable and that there has been progress achieved through standards development organizations and advisory committees.[20] Some also question the FCC's authority to impose any requirements on broadband networks.[21] In sum, these industry comments are remarkable in their uniformity of arguments in opposition to uniform

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[17] *Id.*

[18] *See e.g.* Comments of AT&T at 16 (arguing that "prescriptive guidelines, service level requirements, or mandates will inevitably lag behind and could unnecessarily constrain the pace of innovation."); Comments of CenturyLink at ii, 7 ("The Commission should not adopt specific best practices and mandate their use by network service providers."); Comments of TIA at 9 (stating that "applying new uniform rules creates the possibility of several highly impactful and adverse effects," and claiming that new regulations would ignore the wide variety of challenges faced by networks across the United States, as well as hinder further infrastructure buildout efforts under the Broadband Technology Opportunity Program (BTOP) and the Broadband Infrastructure Program (BIP).)

[19] *See e.g.* Comments of AT&T at 15 (arguing that carriers should be allowed to make their own decisions regarding network redundancy and backhaul technologies, based on "based on its business needs and the ability to fund redundant facilities."); Comments of CTIA – the Wireless Association at 8 ("the Commission should not attempt to mandate the specifics of an effective network survivability strategy as the end result is nearly certain to be either too specific to be relevant to many network operators or too vague to be useful for all. If anything, the adoption of prescriptive regulation could actually harm network reliability by limiting carriers' abilities to implement innovative solutions that are tailored to their unique situations. CTIA in particular urges the Commission not to adopt back-up power regulations."); Comments of PCIA – the Wireless Infrastructure Association and the DAS Forum at 8 (stating that "any rigid 'one-size-fits-all' approach to backup power threatens to make wireless facility siting extremely burdensome and could potentially reduce the number of cell sites by subjecting them to federally-mandated backup power that cannot meet local, state, and federal obligations."); and Comments of the United States Telecom Association at 9 (stating that "a 'one-size-fits-all' mandatory approach to issues such as back-up power are neither feasible nor wise.").

[20] *See e.g.* Comments of CenturyLink at 17-19 (emphasizing that "Commission Action is Unnecessary and Potentially Counter-Productive.")

[21] *See e.g.* Comments of CenturyLink at 20 (arguing that the FCC's authority "depends on what it proposes to mandate," and questioning whether the FCC has authority to impose requirements on broadband networks at all, after the decision in *Comcast v. FCC*, 600 F.3d 642 (D.C. Cir 2010).)

requirements.

Thus, there is a wide disparity between commercial providers' claims of reliability and resiliency and utility industry experiences. While it may be true that commercial providers have achieved higher levels of reliability, these may still fall short of utility requirements and/or provide misleading information. For example, commercial wireless service providers claim that they reach 99% of Americans, but the geographic coverage of their networks is far less.[22] Similarly, while they may claim that their networks are engineered for backup power, that does not necessarily mean that their networks actually have adequate backup power that would provide uninterrupted operation for a sufficient time to meet utility requirements.[23] Finally, commercial service providers' claims with regard to priority restoration and priority access do not meet utility needs in practice.[24]

Some commercial service providers do concede that they have issues with regard to reliability. For example, AT&T stated that "the reliability of communications networks is often tested as much by the sudden spikes in usage during times of emergency as by physical damage to the network infrastructure."[25] Hence, events like the recent earthquake can cause congestion that prevents calls from getting through. Thus, Verizon recommends that business customers "should take steps to establish alternative means of communications; purchase diverse services for mission critical sites or applications; consider maintaining duplicate "hot sites" from which key data and

[22] *See e.g.* Comments of PCIA and the DAS Forum at 6 (stating "The wireless infrastructure solutions that provide wireless voice service coverage to 99.8% of Americans and will provide next generation broadband services are diverse in both form and deployment.")

[23] *See e.g.* Comments of CTIA at 14 (stating that "AT&T has reported that over 99 percent of its wireless sites are engineered with reserve batteries and/or permanent generators.")

[24] *See e.g.* Comments of Oncor at 8-9 (stating that "Oncor's experience is that commercial carriers will not, at present, entertain assignment of priority to electric operations or that they only suggest Wireless Priority Service ("WPS") as a solution. Unfortunately, Oncor's experience with WPS is that it is unreliable in practice because utilities are only prioritized above the general public, with multiple levels of other users ranked above Oncor.")

[25] Comments of AT&T at 22. *See also Id.* at n. 8 (explaining that "[b]ecause of spectrum constraints, however, it is generally not possible to keep significant reserve capacity in the radio access portion of the wireless network, and so where a network is operating with a reduced number of cell sites, customers may experience a degradation in service quality due to increased congestion.")

applications can be accessed in the event of an outage at the primary site; and other such measures."[26]

III. The Commission Should Provide Access to Suitable Auction-Exempt Spectrum to Support Utility Communications Needs, In Addition to Improving the Reliability and Resiliency of Commercial Communications Networks,

Although there is clearly a need to improve the reliability and resiliency of commercial communications networks, UTC emphasizes that the Commission must provide access to suitable auction-exempt spectrum to support the communications needs of utilities and other CII. Although utilities and other CII may use commercial networks for some communications needs, fundamentally utilities and other CII rely on their own private internal communications networks to support the safe, reliable and efficient delivery of essential services to the public at large. In addition, access to suitable spectrum is a critical component for utilities' wireless communications needs. However, utilities and other CII lack access to suitable spectrum to meet their increasing communications needs, due to the advent of smart grid and other advanced critical infrastructure systems. Therefore, the Commission should provide access to suitable spectrum, consistent with the comments of UTC and other utility and CII stakeholders in this proceeding, as well as numerous other proceedings.

UTC appreciates the effort of the Commission to improve the reliability and resiliency of commercial communications networks through this proceeding. It looks forward to working with the Commission and the communications industry, and urges the Commission to provide increased opportunities for utilities to participate in various efforts to identify the issues and develop solutions that will promote the reliability and resiliency of commercial communications networks.

[26] Comments of Verizon at 17.

CONCLUSION

In conclusion, UTC appreciates the opportunity to provide these reply comments in response to the Commission's inquiry into the reliability and continuity of commercial communications networks, including broadband technologies. As UTC has explained herein, utilities continue to have concerns about using commercial service providers to support smart grid and other applications. These concerns are real and should be addressed. Otherwise, utilities will not use commercial service providers or they will only use them for certain applications that are not mission critical. UTC looks forward to working with the commercial service providers to develop solutions to these issues, and it supports the Commission's effort to address these issues as well. Finally, the Commission should not force utilities to use commercial service providers; instead it should allow utilities the ability to choose between private internal networks and commercial service providers as appropriate. In that regard, the Commission should continue to promote the development of private internal communications networks by providing access to spectrum, as UTC has advocated in numerous other proceedings.

Respectfully submitted,

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